

Claims

1. Control valve (14, 14.1 to 14.6) for feeding a
5 cleaning fluid to at least one nozzle opening (23)
of a nozzle (20) of a washing bay (10) for vehicle
windcreens, the valve (14) having at least two
outlets (26, 28) that are coupled or couplable
with the nozzle opening (23) or the nozzle
10 openings (23), the valve (14) having an inlet (24)
that is coupled or couplable with a feed pump (16)
for the cleaning fluid, and in which a valve body
(50, 60, 70, 80) influencing the path of the
cleaning fluid from the inlet to the outlets is
15 provided for, **characterised in that** the valve body
(50, 60, 70, 80, 90) is controllable via the
pressure (P_0 , P_1 , P_2) of the cleaning fluid in at
least two valve positions.
2. Control valve (14) according to claim 1,
20 characterised in that the valve body (60, 70, 80,
90) is constructed as a slide element,
particularly as a longitudinal or rotary slide
element.
3. Control valve (14) according to claim 1 or 2,
25 characterised in that the valve body (70, 80, 90)
is constructed as a piston slide element with two
piston sections (72, 74) having different-sized
pressure-application surfaces.
4. Control valve (14) according to any one of the
30 preceding claims, characterised in that the valve
is constructed as a multi-way slide valve, in

particular as a 3/2-way longitudinal slide valve,
or as a 3/3-way longitudinal slide valve.

5. Control valve (14.1) according to any one of the preceding claims, characterised in that the valve body (50) is a ball element.
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6. Control valve (14) according to any one of the preceding claims, characterised in that the valve body (50, 60, 70, 80, 90) can be toggled back and forth between at least two valve positions.
- 10 7. Control valve (14) according to any one of the preceding claims, characterised in that the valve body (50, 60, 70, 80, 90) in a first valve position, particularly in a low-pressure position, connects the inlet (24) with the first outlet (26, 28) or with the first outlet (26, 28) and the
15 second outlet (28, 26).
8. Control valve (14) according to any one of the preceding claims, characterised in that the valve body (50, 60, 70, 80, 90) in a second valve
20 position, particularly in a high-pressure position, separates the inlet (24) from the first outlet (28, 26) and connects the inlet (24) with the second outlet (26, 28).
9. Control valve (14.6) according to any one of the preceding claims, characterised in that a bypass
25 (96) circumventing the valve body (90) in one valve position (P_1) is provided for which connects the inlet (24) with an outlet (28), the input (94) or the output (98) of the bypass (96) being closed
30 in at least one other valve position (P_0 , P_2).

10. Control valve (14.6) according to claim 9,
characterised in that in a first valve position
(P_1), the input (94) and the output (98) of the
bypass (96) - and hence also the one outlet (28) -
5 are open, and the other outlet (26) is closed, and
that in a second valve position (P_2) the input (94)
of the bypass (96) is open, the output (98) of the
bypass (96) is closed - and hence the one outlet
(28) is closed, and the other outlet (26) is open.
- 10 11. Control valve (14) according to any one of the
preceding claims, characterised in that the valve
body (50, 60, 70, 90) in a basic position,
particularly in a zero-pressure position,
separates the inlet (24) from both outlets (26,
15 28).
12. Control valve (14) according to any one of the
preceding claims, characterised in that the valve
body (50, 60, 70, 80, 90) in at least one valve
position is subjected to the spring force of a
20 spring element (52), in particular of a helical
spring.
13. Control valve (14) according to claim 12,
characterised in that the valve body (50, 60, 70,
80, 90) in at least one valve position is driven
25 by the spring force against a stop (58, 62, 76,
78).
14. Control valve (14) according to any one of the
preceding claims, characterised in that the valve
body (50, 60, 70, 90) in at least one valve
30 position acts solely against the spring force of

the spring element (52), without being driven against a stop.

15. Control valve (14) according to any one of the preceding claims, characterised in that the valve (14) is disposed in the nozzle body (22) of a nozzle (20).
16. Control valve (14) according to any one of claims 1 to 14, characterised in that the valve is disposed between the feed pump (16) and the nozzle (20).
17. Control valve (14) according to any one of claims 1 to 14, characterised in that the valve is disposed in the feed pump (16).
18. Nozzle arrangement (12) with at least one nozzle (20) and with a valve (14) connected with the nozzle opening (23) of the nozzle (20) and housed in particular in the nozzle body (22) of the nozzle (20) according to any one of the preceding claims.
19. Nozzle arrangement (12) according to claim 18, characterised in that the nozzle (20), according to the pressure (P_{01} , P_1 , P_2) of the cleaning fluid, and hence according to which fluid channel (30, 32) is used to feed the cleaning fluid to the nozzle opening (23) in question, is suitable for creating different types of fluid jets (40, 46).
20. Washing device (10) for vehicle windscreens (42), with a nozzle arrangement (12) according to any one of the preceding claims, and with a feed pump

(16) for the cleaning fluid coupled with the nozzle arrangement (12).

21. Washing device (10) according to claim 20,
characterised in that the inlet of the valve (14)
5 is connected via a fluid pipe (18) to a feed pump
(16) that supplies the cleaning fluid, controlled
with varying pressure (P_1 , P_2).
22. Washing device (10) according to claim 20 or 21,
characterised in that the pressure of the feed
10 pump is controlled as a function of vehicle speed.